

AN INTERESTING CHIRONOMID *TELMATOGETON AUSTRALICUS* SP.N. FROM A SOUTH AUSTRALIAN REEF

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ALTHOUGH the genus *Telmatogeton* of the subfamily *Clunioinae* of the *Chironomidae* has not been recorded hitherto from Australian coasts, it is represented in the Southern Hemisphere by species from the coasts of South America, South Africa, St. Paul I., and Japan. Eight species have been previously described as follows:

Telmatogeton sancti-pauli Schiner, St. Paul I. and South Africa.

Telmatogeton minor Kieffer, South Africa.

Telmatogeton laerenticola Terry, Hawaii.

Telmatogeton abnorme Terry, Hawaii.

Telmatogeton trochanteratum Edwards, Chile.

Telmatogeton simplicipes Edwards, Chile.

Telmatogeton japonicus Tokunaga, Japan.

Telmatogeton pacificus Tokunaga, Japan.

The genus is essentially marine, except for the two Hawaiian species which inhabit torrents. The species described herein is the first to be recorded from this country, and differs from all previously described forms. It was first found by Mr. H. M. Hale, frequenting the reef off Sellick's Beach, South Australia, in February, March, and April, 1936, and again by Miss Joan Campbell on the reef off Noarlunga.

The genus was erected by Schiner for the genotype *T. sancti-pauli* from St. Paul I. in the Indian Ocean. It has in recent years been better defined by Edwards, who showed that the South African species *Trissoclunio fuscipennis* Kieffer was synonymous, and also that Schiner was wrong in stating that the palpi in *T. sancti-pauli* were four-segmented, these being actually only two-segmented. Kieffer, in his monograph of the *Chironomidae* in the Genera Insectorum, placed the genus in the *Chironominae*, but it is now placed in the *Clunioinae*, a subfamily easily distinguished from all others by the absence of the anepisternal suture. The *Clunioinae* comprises a number of genera which are more or less marine in habit, and many of which are apterous or semi-apterous in one or both sexes. As some of these other genera may be found to occur along our coasts, the following key, taken from Edwards (Diptera of Patagonia and Southern Chile, Part 2, fasc. 5, Brit. Mus., 1931) is given.

KEY TO THE KNOWN GENERA OF CLUNIONINAE.

1. Fifth tarsal segment deeply trilobed at tip 2.
 Fifth tarsal segment simple or slightly bilobed 5.
2. Both sexes fully winged 3.
 Both sexes brachypterous 4.
3. Legs unmodified; hairs of tibiae weak *Telmatogeton* Schiner.
 Front legs of male modified; femora swollen; tibiae with tubercle at base; hairs
 of tibiae strong, sometimes flattened (West Coast North America).
 Paraclunio Kieffer.
4. Wings about as long as thorax in both sexes; halteres present (Europe).
 Psammathomyia Deby.
 Wings and halteres minute or absent (female). (Antarctic) *Halierytus* Eaton.
5. Eyes bare; tarsi long, fourth segment cordiform and much shorter than third
 or fifth, second hind tarsal segment longer than third; thorax with rows of
 aerostichal hairs continued back to scutellum; both sexes fully winged; an-
 tennae 6-segmented (both sexes). (Atlantic, Indian, and Pacific Coasts).
 Thalassomyia Schiner.
 (= *Galapagomyia* Johns.)
 Eyes hairy; tarsi shorter, fourth segment not markedly cordiform; second
 hind tarsal segment not longer than third; thorax without aerostichal hairs;
 wings reduced (at least in female). 6
6. Second hind tarsal segment subequal to third; fifth tarsal segment on all legs
 simple; wings strap-shaped (both sexes); palpi long, 3-6-segmented; antennae
 6-segmented (male) or 4-segmented (female). (California).
 Eretmoptera Kellog.
 Second hind tarsal segment much shorter than third, fifth slightly bilobed;
 wings fully developed (male) or absent (female); palpi rudimentary; an-
 tennae 11-segmented (male) or 7-segmented (female). (North Atlantic and
 North-West Pacific Coasts). *Clunio* Haliday.

TELMATOGETON Schiner.

- 1866 *Telmatogeton* Schiner, Verh. h.g. Ges. Wien., 16,931.
 1913 *Charadromyia* Terry, Proc. Haw. Ent. Soc., 2,292.
 1920 *Trissoclunio* Kieffer, Ann. S. Afr. Mus., 17,523.
 1928 *Telmatogeton* Edwards, Konowia, 7,234.
 1931 *Telmatogeton* Edwards, Diptera of Patagonia and South Chile, Pt. 2,
 fasc. 5, 304; Brit. Mus.
 1935 *Telmatogeton* Tokunaga, Philip. J. Sci., 57, 491.
 1935 *Telmatogeton* Tokunaga, Chironomidae from Japan (5), Mushi, 8, 15.

The genus can be easily recognized by the complicated structure of the trilobed fifth tarsal segment, and by its fully developed wings in both sexes. Its nearest related genus is *Paraclunio* from North America. The genus is confined to the Southern Hemisphere.

TELMATOGETON AUSTRALICUS sp. nov.

Description of Adult: Length (both sexes) 3.0 mm., wing expanse 4.0 mm. Head light bluish-grey with dark stripes as figured. Scutellum and postscutellum dark brownish. Antennae dark, palpi darkish. Body lightish, with greyish mottling and laterally on each side with a pair of fine dark longitudinal stripes; hypopygium

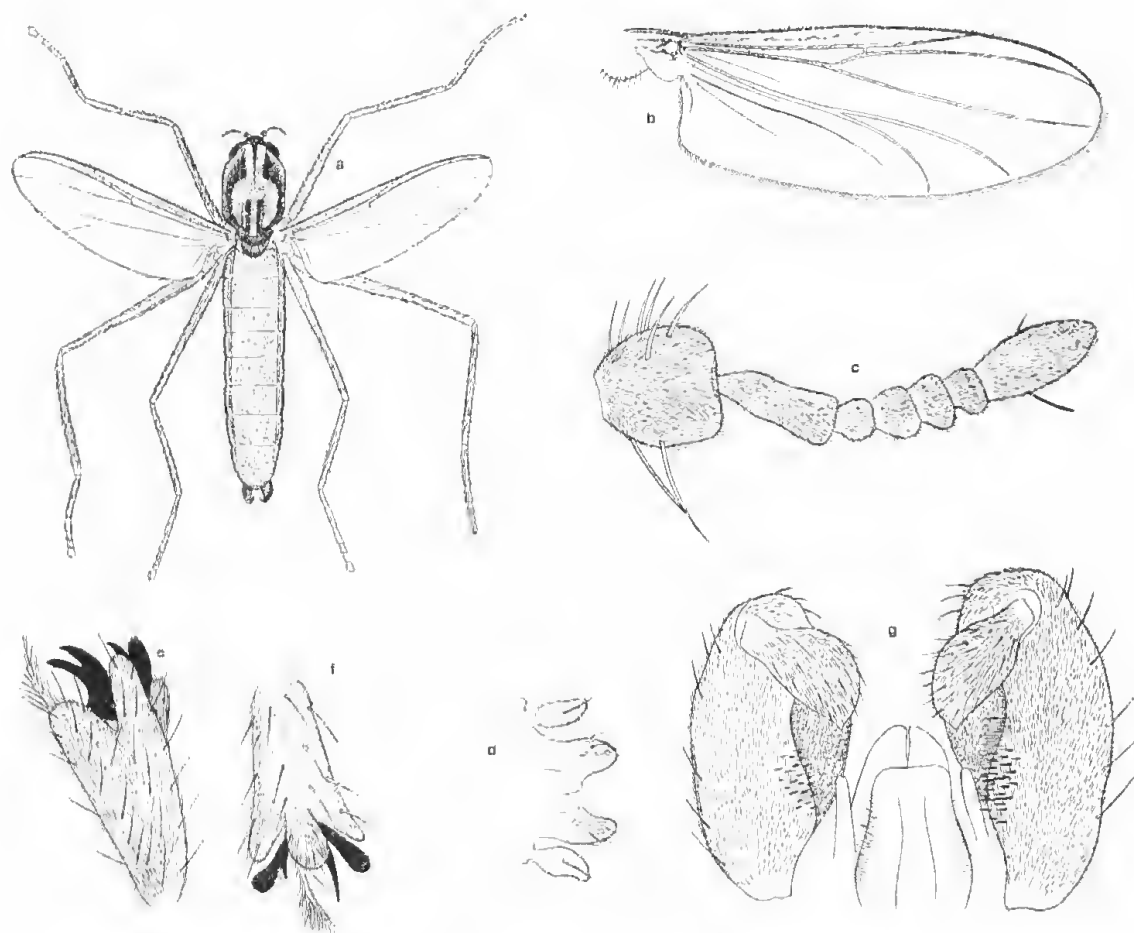


Fig. 1. Adult male: a, entire; b, wing; c, antenna; d, labium and labial palpi; e, fifth tarsal segment of middle leg from side; f, same from above; g, hypopygium.

dark brownish; wings in life pearly-grey opalescent; legs greyish-brown. Antennae 7-segmented, basal segment large, as broad as long, with about 8 setae; second segment slightly more than twice as long as wide at the tip, without setae; segments III-VI subglobose without setae; VII twice as long as wide, tapering towards tip without terminal process and with two setae; palpi two-segmented as figured. Eyes large, surrounded with fairly long numerous setae; mesonotum apparently without discernible setae; scutellum with two latero-anterior setae and four subposterior setae. Wings opalescent, venation and setae as figured; fork of $Cu_1 - Cu_2$ very slightly distad of r-m; macrotrichia on radius (R_1 and

$R_1 + \bar{5}$) not very numerous, about 20; subcosta with about 6 macrotrichia R_1 slightly less than half length of $R_1 + \bar{5}$; squamae fairly large, fringed; halteres yellow. Legs long and slender; femora on all legs somewhat thicker on basal two-thirds; all trochanters simple; fifth tarsal segment trilobed as in genus; claws with basal membranous plates which are broad basally and taper to a sharp point, claws bifid almost to base; inner arm pointed, outer arm broadened, especially at apex, which has a fringed appearance (in this respect the species approaches *T. trochanteratum* from Chile), empodium long and long-haired; abdomen with sparse short hairs; hypopygium as figured.

Holotype male and *allotype* female and paratypes from Sellick's Beach, South Australia, April, 1936; other specimens from same locality February and March, 1936 (H.M.H.); also from Noarlunga, South Australia, April, 1936 (Miss J.C.).

Remarks: The species described in this paper is closely related to *T. trochanteratum* Edwards from Chile, and *T. minor* Kieffer from South Africa. It differs from both in the shape of the last antennal segment, and also in the lack of a protuberance on the middle trochanter in the male. The outer arms of the tarsal claws of the male are somewhat larger than in *T. minor*, according to the excellent figures and redescription of this species given by Hesse (Tr. Royal Entom. Soc., London, vol. 82, 27-40, 1934), while there also appears to be slight differences in the venation at the junction of r-m with $R_1 + \bar{5}$.

Description of Larva. Length of the two specimens found 4.0 and 5.0 mm. respectively. Colour in life probably whitish-green, only the head brown. General facies that of previously figured species of the genus. Head capsule non-retractile, longer than broad and highly chitinized, the surface sculptured with fine raised dots, but apparently without the numerous fine hairs of *T. japonicum* Tok., the unpaired dorsal sclerite between the anterior arms of the cephalic suture is oval, widest before the middle, but not as wide as in *T. japonicum*, furnished with a pair of lateral subanterior setae, lateral sclerites each with two setae and a medial pair of eyes, on each sclerite are four pores, one close to the anterior setae of the median sclerite, one just behind and lateral of the eyes, and two at the base and close to the median arm of the cephalic suture. The labrum is dorsally as figured with 3 pairs of setae. The antennae are 4-segmented, the first segment being stout and about half as long again as wide, the second similar but smaller, and the third and fourth very small and elongate. The mandibles are 5-toothed with 3 setae, while the labium has 5 teeth on each side besides the large broad median tooth. The labial palp is small, and as figured. The body is elongate, with few but very fine setae on each segment, the anterior pseudopods are furnished with a series of rows of gradually increasing simple curved hooks, the posterior pseudopods have a single

(apparently) circlelet of strongly chitinized hooks which have an inner basal projection. The last body segment has two pairs of strong setae, each pair arising from a single base.

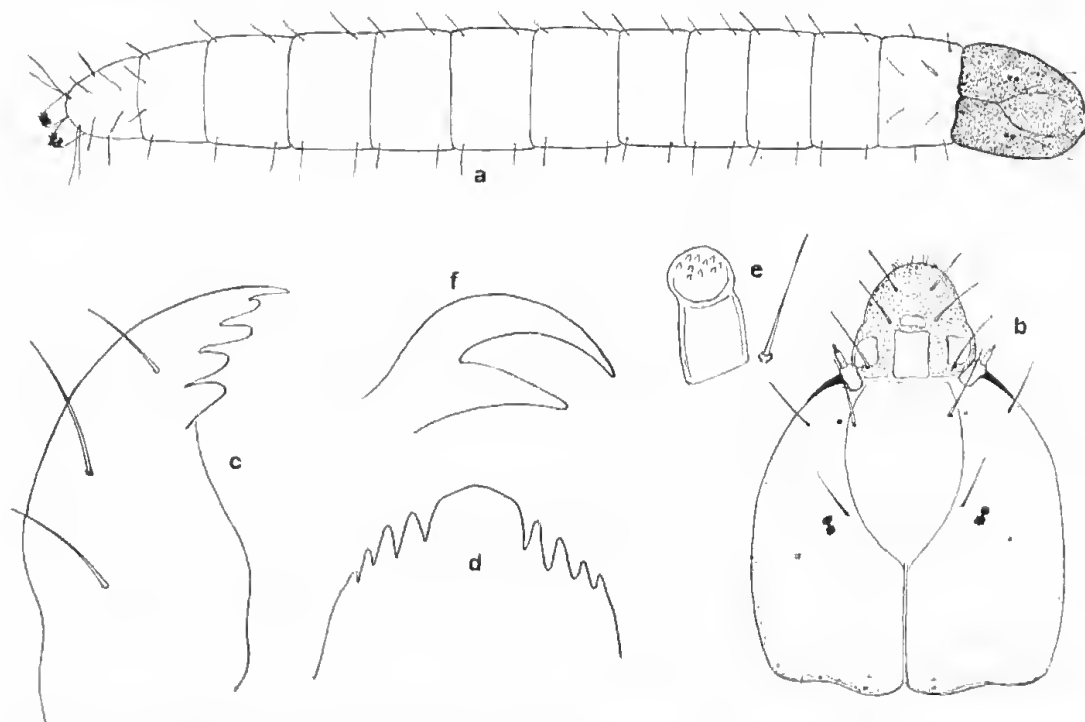


Fig. 2. Larva: a, entire dorsal view; b, head dorsal view; c, mandible; d, labium; e, labial palp; f, crochet of posterior pseudopods.

Locality. As for the adults, March 3, 1936.

Biological Notes. With the exception of the two Hawaiian species all members of this genus are truly marine forms living on reefs at low tide level. The Hawaiian species frequent torrents. To Mr. H. M. Hale I am indebted for the following observations on our local species:

"The two larvae were found floating on the surface film of rock pools at the extreme edge of the reef at low tide. The adults appear, often in thousands, on calm days with bright sunshine during the summer. Few, if any, emerge during cloudy days. They are seen only at low tide near the outer portions of the reef, which are covered at high water by about a fathom of water. They move rapidly with a hopping movement over the mossy rocks and about the small pools. In April examples were seen in copula at the edges of the rock pools, the tide being then dead low."

It is interesting to notice that while the Japanese species are, according to Tokanunga, nocturnal insects, our local one, as with the related European *Clunio marinus* Hal., is diurnal.